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BELLS PALSY- A REVIEW

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ABSTRACT

Peripheral facial nerve palsy is the commonest cranial nerve motor neuropathy. The causes range from cerebrovascular accident to iatrogenic damage

KEYWORDS: Orofacial Pain, Cranial Nerves, Bell Palsy.

Introduction

Orofacial Pain is a complaint that around the world affects millions of people on a daily basis.(1, 2) It constitutes any symptom that occurs from a large number of disorders and diseases that result in a sensation of discomfort or pain felt in the region of the face, mouth, nose, ears, eyes, neck, and head. When pain occurs in the Orofacial region however, it often sparks an immediate attention consisting of a significant level of concern and worry.(3)

Orofacial pain is the field of dentistry devoted to the diagnosis and management of chronic, complex, facial pain and oromotor disorders.(4) Orofacial pain, like pain elsewhere in the body, is usually the result of tissue damage and the activation of nociceptors (noci-is derived from the Latin for "hurt"),(5) the relatively unspecialized nerve cell endings that initiate the sensation of pain which transmit a noxious stimulus to the brain. However, due to the rich innervation of the head, face and oral structures, orofacial pain entities are often very complex and can be difficult to diagnose.(4)

In this century, the concept of pain has evolved from that of a one-dimensional sensation to that of a multidimensional experience encompassing sensory, discriminative, cognitive, motivational and affective qualities. The most recent definition of pain, produced by the Task Force on Taxonomy of the International Association for the Study of Pain (IASP) is, "An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage."(6) (burkitt's text book – 10th edition)

Facial nerve paralysis (FNP) is the most common cranial nerve disorders and it results in a characteristic facial distortion that is determined in part by the nerves branches involved. With multiples etiologies, these included trauma, tumor formation, idiopathic conditions, cerebral infarct, pseudobulbar palsy and viruses.(7)

Bell's palsy or idiopathic facial paralysis is the most common cause of unilateral facial paralysis, accounting for approximately 50% of the cases.(8) The reported incidence of Bell's palsy ranges from 13 - 34 per 100,000 population annually.(9) The second most common cause of facial paralysis is infection (15% of cases), may be odontogenic; followed by neoplasms (13.5%) such as acoustic neuromas on the base of the brain, parotid tumors of the side of the face, and glomus jugular tumors of the neck. Bell's palsy affects people of all ages, but, most commonly, individuals 15 - 45 years old. Its onset is sudden, with facial muscle weakness progressing over hours to days.(8)

In 85% of the cases recovery of facial muscle function begins within the first 3 weeks after onset. Of the remaining 15% of the patients, return of facial muscle function does not begin until after 3 months. Approximately 70% of all patients recover completely. The remaining 30% may experience residual weakness, hyperkinesia, contracture, or synkinesis. The degree of recovery bears some relation to age, with older patients having a poorer recovery.(9)

A thorough medical history and physical examination are the first steps in making a diagnosis. It is essential to rule out other causes of facial paralysis before making the definitive diagnosis, which implies the intervention.(8)

Discussion

Teeth are a common and obvious source of Orofacial pain. Ninety percent of orofacial pain arises from the teeth and oral structures.(2) As dentists, we are trained to diagnose and treat often acute dental pain problems. After ruling out dental problems, musculoskeletal and neuropathic pain conditions are the most common causes of facial pain.(2, 9, 10) Due to the diversity of manifestations and different mechanisms of pain transmission, the differential diagnosis is crucial for the establishment of a successful management strategy.(4)

Persistent and chronic pain is more common in the head and neck region than in any other part of the body; therefore, dentists are more likely to encounter these rather complex cases in their practices.(11) Causes of unilateral facial nerve paralysis are varied and include multiple possibilities (idiopathic, infectious, traumatic, and neoplastic). Bell's palsy is the most common cause of unilateral facial nerve paralysis. (12)

Facial nerve is a mixed nerve with special visceral efferent, general visceral efferent, special visceral afferent and general somatic afferent functions.(13) The pathway of the facial nerve is long and relatively convoluted, and so there are a number of causes that may result in facial nerve paralysis.(14) Facial nerve paralysis may be central or peripheral in origin, complete or incomplete and results in a characteristic facial distortion that is determined in part by the nerves branches involved. Its cause is varied and included idiopathic conditions, infections, tumor formation, iatrogenic problems, trauma, cerebral infarct, pseudobulbar palsy and viruses.(7)

Tissue response to infection involves cytokine release and edema which cause local metabolic disturbances, intraneural swelling and ischemia with vasa nervorum (small arteries that provide blood supply to peripheral nerves), preventing normal axonal conduction.(15, 16) Neuropraxia of the facial nerve caused by compression is the most likely cause of the patient's hemi-facial paralysis. Minor compression causes temporary conduction block without axonal degeneration, and the recovery is full and rapid. Removal of the offending tooth with endodontic treatment of next tooth resulted in improvement, confirming that a temporary conduction block is more likely than axonal disruption.(16)

The review of literature confirms that lower motor neuron palsy of the facial nerve in conjunction with infections of dental origin is rarely reported. Hamlyn et al. reported the case of 12 years old child who developed acute hemiplegia attributable to a fractured infected lower incisor tooth. The mechanism was unclear but the possibility of local infection crossing internal carotid arteries and subsequent central nervous symptoms appeared most likely.(16)

Bobbitt TD, et al. reported a case in which an 18 years old man presented with an infected lower third molar and palsy of the frontal branch of the left facial nerve in the presence of left parotid and left posterior auricular swelling. Resolution occurred within 6 months. The authors concluded that the exact mechanism was unclear, but likely to be a mixed picture of toxicity and compression neuropraxia.(16, 17)

Vasconcelos BC, et al. reported a case of a 21 years-old black woman who developed a Bell's palsy after an impacted third molar surgery under local anesthesia. The treatment was based on prescription of a citidine and uridine complex; one tablet twice per day and a close follow up. Three months later, the patient recovered her normal facial muscle activity.(7)

In conclusion, though odontogenic infection rarely presents with facial nerve paralysis and it should be considered, particularly before more significant complications of submandibular or sub-massetric abscess formation becomes established.

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